

***Grand Avenue
Northwest Corridor Study***

WORKING PAPER NO. 5

MAJOR ISSUES, GOALS, AND POLICIES

(Draft November 6, 2000)

Prepared for



Prepared by

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EXECUTIVE SUMMARY

The purpose of this working paper is to identify the major issues within the corridor and then develop study goals and objectives that can be used in evaluating proposed infrastructure improvement options.

A wide range of issues concerning the Grand Avenue corridor has been identified during the study. An initial list of issues was developed during the proposal phase of the study. A list of 18 issues was included in the request for proposal from the Maricopa Association of Governments (MAG). Additional issues were specified in two letters to MAG from member agencies and community representatives during the scoping phase of the project. The letters are included in the Appendix.

To initiate the public involvement process, an agency / community forum was held on July 28, 2000, and a public meeting was held on September 27, 2000. At these meetings, the general public and agency and community representatives had opportunities to provide input into identifying issues. Agency and community representatives and the public were generally in agreement on the list of issues identified for the study. For details on responses, review the minutes from the forum meeting and the summary of comments received at the public meeting that are included in the Appendix.

Many of the remaining issues are closely related and can be grouped into the following 12 major issues. The URS Project Team believes these issues should be addressed in the corridor study. The issues are prioritized based on a questionnaire completed by the public at the public meeting. Questionnaire results are summarized in the Appendix. Input into issue prioritization from agency and community representatives will be sought at an agency / community forum on November 14, 2000.

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|-----------------------------|---|
| 1. Barrier to travel | 7. Regional Mobility/ System Continuity |
| 2. Emergency vehicle access | 8. Safety |
| 3. Intersection Geometry | 9. Access control |
| 4. Travel along Grand | 10. Elderly Mobility |
| 5. Environmental Concerns | 11. Alternative Mode Travel |
| 6. Aesthetics | 12. Railroad |

The main goal of the Grand Avenue Northwest Corridor Study is to develop a consensus on selecting a preferred infrastructure improvement option for the corridor. It is intended that the recommended option be incorporated into the MAG Long Range Transportation Plan.

Objectives for the corridor study were developed by the URS Project Team to address each of the categories of issues presented above. Proposed options will be evaluated in Task 9 against each of the objectives to determine which option best addresses the key issues within the corridor. The objectives are listed below, not in any particular order.

- Improve crossings of Grand Avenue and the railroad.
- Improve emergency vehicle access within the corridor.
- Improve traffic operations at intersections.
- Expedite travel along Grand Avenue.
- Minimize environmental impacts including noise, visual and air pollution.

- Improve aesthetics of the corridor.
- Identify opportunities to enhance street network continuity to improve regional mobility.
- Maintain and enhance system continuity on Grand.
- Improve safety within the corridor.
- Address access control policies for Grand Avenue.
- Enhance elderly mobility.
- Enhance alternative mode travel within the corridor.
- Develop strategies that seek to improve both rail and vehicular traffic within the corridor.

1.0 INTRODUCTION

The purpose of this working paper is to identify the major issues within the corridor and then develop study goals and objectives that can be used in evaluating proposed infrastructure investment options.

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2.0 STUDY PARAMETERS

Several of the issues identified should be considered more as study parameters or things to consider when developing the options. These parameters also include concerns about how the study is conducted. The parameters developed for the study establish minimum guidelines that the study must follow. The parameters also establish criteria that investment options must meet to be considered in the MAG long-range transportation plan and transportation improvement programs. The study parameters are summarized below.

A. Provide Public Involvement Opportunities

Public and agency involvement on all transportation projects is of utmost importance to MAG. A public involvement plan was developed for this study to ensure that opportunities for public input exist during this corridor study. Public involvement will help develop consensus among stakeholders that the study was thorough, that their concerns and needs were addressed, that the Study provides vision for the Corridor, and that the study results in concepts for improvements in the Corridor that can be implemented. MAG and the project team seek to provide minority communities and low income communities access to public information and an opportunity for public participation. In addition, products completed as part of this project will be made available to the public.

B. Conform to Title VI and Environmental Justice Regulations

From its inception, the MAG has been committed to ensuring that its transportation plans and programs meet the needs of the entire regional community, including the Valley's many different socioeconomic and ethnic groups. MAG embraces the principles of Title VI of the Civil Rights Act of 1964, which provides that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to

discrimination under any program or activity receiving Federal financial assistance.” MAG also adheres to federal and state laws that prohibit discrimination on the basis of religion, age, gender, handicap or disability.

MAG is further committed to the principles of “environmental justice,” by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.

The project will develop transportation investment options that conform to the principles of Title VI and Environmental Justice. There is also a renewed commitment to ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

C. Develop Projects that Accommodate Design Traffic Volumes

Any investment option for Grand Avenue should be able to handle traffic volumes through its design year. For example, projects that are designed to provide improvements for 10 years must be able to handle traffic forecasts for year 2010. Design years for this project are year 2010 for intermediate projects and 2025 for long-term projects. Traffic forecasts will be developed using the MAG EMME2 Regional Transportation Model.

D. Develop Projects that Accommodate the Many Functions of Grand Avenue

Grand Avenue serves several different functions at the same time:

- (1) US 60 that serves statewide traffic;
- (2) A major arterial street serving as a regional route for the Northwest Valley communities; and
- (3) A street that provides local access to commercial and residential uses along the corridor

Each of these functions is described below. Based on comments from the public and community and agency representatives, it appears any improvement to Grand Avenue must maintain these various functions.

State Highway – Grand Avenue has served as a major statewide route for many decades. It has historically carried the route numbers of US 60, SR 93, SR 89 and others. Today, Grand Avenue is designated as US 60 and effectively serves as the extension of US 93, which begins in Wickenburg, continues northward across Hoover Dam to link with I-15 in Las Vegas. US 93 has been designated by Arizona as a CANAMEX Highway, and ADOT is spending over \$250 million to upgrade US 93 to a four-lane divided highway through its entire length in Arizona. In addition, ADOT and MAG are evaluating a bypass around Wickenburg and ADOT will begin construction on the portion of Grand Avenue (US 60) from north of the Beardsley Canal to near the Wittman railroad overpass. This project will complete Grand Avenue as a four- or six-lane roadway from Phoenix to Wickenburg.

Loop 303 is planned to be widened by the Maricopa County Department of Transportation (MCDOT) to a four-lane divided highway and extended to Lake Pleasant Road. Grand Avenue is a main link between Loop 101 and Loop 303. East of Loop 101, ADOT has programmed to complete seven new grade separations along Grand to take one of the streets out of the six-legged

intersections. These improvements will help eliminate notorious bottlenecks on Grand and can affect traffic on Grand through the study area west of Loop 101. All of these actions indicate that without a major diversion route, Grand Avenue in the study area will likely continue to serve as a through highway.

Regional Arterial Roadway – One of the issues in the study area is the absence of a continuous arterial network in this part of the metropolitan area. The railroad, the rivers, and the large planned communities that have been developed have combined to create the least continuous street network found anywhere in the metropolitan area. Grand Avenue, as a result, carries an extra burden as a major arterial street serving the region.

Local Access – The majority of traffic on Grand Avenue is more locally generated. Grand Avenue provides access to the commercial and residential uses along the corridor in the City of Surprise, City of El Mirage, Town of Youngtown and the unincorporated areas of Sun City and Sun City West. The rapid development that is occurring, particularly in the City of Surprise, will continue to accelerate the arterial use of the highway over the through-highway function.

E. Develop Projects that Can Be Constructed

Recommended improvements should be implementable. Projects should be practical and fit within available right-of-way and meet environmental regulations. Projects should meet ADOT Standards, Policies and Procedures. The preferred option will also need to be able to be conducive to staged construction (to meet available transportation funds) and be able to address the short-term needs as well as long-term needs of the corridor. Staged construction could also minimize disruptions and street closures to traffic.

F. Develop Projects that Are Fundable

Potential investment options need to have a realistic opportunity to be included in the MAG Long-Range Transportation Plan (LRTP). Federal regulations require that a financial plan with existing and proposed funding sources accompany the MAG LRTP. Total construction and operating costs for all projects within the MAG LRTP plan cannot exceed projected transportation funds. Thus, project costs for investment options will need to be reasonable and fit within the LRTP projected available transportation funds. Short-term smaller projects may be eligible for money dedicated to safety improvements.

3.0 MAJOR ISSUES

Upon reviewing the list of issues identified for the corridor, they all appear to have merit in this corridor study and none should be deleted. However, many of the issues are closely related and can be combined to narrow the list. Below is the combined list of 12 major issues that the URS Team believes should be addressed in the corridor study. The issues are prioritized based on the questionnaire from the public at the September 27, 2000, public meeting. Questionnaire results are summarized in the Appendix. Input into issue prioritization from agency and community representatives will be sought at an agency / community forum on November 14, 2000.

1. *Barrier to Travel*

Grand Avenue has a right-of-way of generally 150 feet through the study area. The Burlington Northern Santa Fe Railroad (BNSF) has a parallel right-of-way also that is typically 100 to 150 feet wide. The result is a large swath that poses a major obstacle to pedestrians, bicyclists, and golf cart drivers attempting to cross Grand Avenue. As discussed above, there are a limited number of streets that intersect Grand and very few of these cross Grand. The result is the Grand / BNSF corridor is a seam in the project area. Travel needs across the corridor are a major issue. Grade separations have been suggested as possible ways to improve crossing the railroad and Grand Avenue. El Mirage Road, Bell Road and Meeker Boulevard are intersections that have been identified as possible locations for grade separations.

2. *Emergency Vehicle Access*

Emergency vehicles can find their access to Boswell and Del E. Webb hospitals blocked by heavy train traffic on the BNSF rail line. This is a potential life-threatening problem that affects the Northwest Valley. The hospitals serve all the communities on both sides of Grand Avenue. Access to the hospitals from Grand is provided via 103rd Avenue, 107th Avenue, Meeker Boulevard and RH Johnson Boulevard. Grade separations were identified as possible solutions for improving access to the hospitals. Grand Avenue also serves as a route for the fire and police departments. Access to Grand Avenue (especially at 111th Avenue for the fire department) must be maintained for emergency vehicles. Congestion at intersections adds to the emergency vehicle response times. Pre-emption at signals would aid emergency vehicles.

3. *Intersection Geometry*

The need for intersection improvements along Grand Avenue was one of the issues raised the most. Almost every major intersection with Grand Avenue within the study area was identified as needing improvement to either increase safety or reduce congestion. As growth continues in the area, the intersections with Grand will become increasingly congested. The four intersections in Sun City and Youngtown are already very congested. Traffic in the Bell Road intersection is increasing rapidly and is compounded by the 45-degree skew of the intersection. Other intersections with Grand are becoming critical including RH Johnson / Sunrise, Greenway, Dysart, and Thunderbird. The parallel railroad drainage channel and frontage roads complicate many of the intersection geometrics. The diagonal orientation of Grand creates challenges at every intersection.

As traffic volumes increase with development, the signalized intersections are the capacity limitation of the roadway. Suggestions for improvement include adding additional turn lanes and through lanes, signal improvements, and grade separations. East of Loop 101, grade separations were chosen as the solution for intersection improvements along Grand Avenue. Meeker Boulevard was identified as an intersection needing more turn lanes as turning traffic often queues into through travel lanes.

4. *Travel along Grand*

Reducing traffic congestion along Grand Avenue was identified as a corridor need. The signalized intersections contribute to the travel delay along Grand. A synchronized traffic signal control system that responds to traffic demand is desired. The Grand Avenue corridor is included in the regional

AZTech plans for intelligent transportation system (ITS) improvements that include loop detectors, closed-circuit television (CCTV) cameras and variable message signs (VMS). Potential applications for ITS along Grand Avenue should be explored.

Grand Avenue also has an inconsistent cross-section between Loop 101 and Loop 303. For the majority of the corridor, Grand Avenue has a four-lane cross-section (two lanes in each direction). It widens out to a six-lane cross-section through parts of Sun City. There is some interest in developing Grand Avenue into an expressway.

5. *Environmental Concerns*

Environmental impacts should be minimized, particularly those associated with neighborhoods such as noise and visual impacts. Being a non-attainment area, air pollution is always a concern in the Phoenix metropolitan area. Enhanced noise abatement was requested for the corridor. The noise and air pollution contributed by truck traffic is also a concern. Restriction of traffic truck on Grand Avenue and Loop 303 is desired. Historical or cultural resources should also not be impacted.

6. *Aesthetics*

The Grand Avenue corridor through the study area has more attractive land uses and more landscaping than most of Grand Avenue further to the southeast. Even so, there is community interest in further improvements and enhancements and in ensuring maintenance of the aesthetic features that exist. Grand Avenue serves as a gateway to the metropolitan area. The public views both the drainage channel and railroad paralleling Grand Avenue as eyesores. The drainage channel also tends to collect trash. There is interest in providing enhanced landscaping to help attract new development or redevelopment to the corridor. Aesthetic treatment of any new transportation facilities / features is also desired. Attractive designation signage for West Valley Cities has been requested.

7. *Regional Mobility / System Continuity*

As discussed above, Grand Avenue is one of a few continuous routes through the study area. Other continuous routes include Loop 101, Loop 303, 99th Avenue, Olive Avenue and Bell Road. Grand Avenue provides a critical link in connecting Loop 101 and Loop 303. Bell Road is severely congested and operates near capacity. Grand Avenue serves as a diversion route for traffic destined for Bell Road.

Two routes currently serve in a limited capacity as diversion routes for through traffic. SR 74 that traverses east-west just south of Lake Pleasant and connects to I-17 at Carefree Highway is increasingly being used as an alternative route for through traffic. Loop 303 was built as a two-lane highway and is currently under the jurisdiction of MCDOT. MCDOT will begin construction of a Loop 303 overpass of Grand Avenue and the railroad this year. The City of Surprise and the Sun City Grand development are working with MCDOT to provide a depressed roadway with street overpasses to connect the two parts of the development. MCDOT has also developed plans to extend Loop 303 eastward to Lake Pleasant Road with construction programmed to begin in 2002 and have some preliminary plans for expansion of the roadway southward to I-10 and further south. MAG is

currently studying the possibility of extending Loop 303 to I-17. The feasibility of diversion routes to reduce traffic on Grand should be explored during the study.

There are requests to improve and extend El Mirage Road across Grand Avenue and down to Olive Avenue. Improvements along Olive Avenue have also been requested including widening it to four lanes and providing improved left-turn movements at Grand Avenue. Providing additional connections between Grand Avenue and Bell Road has also been suggested.

8. Safety

Several safety issues have been raised. These include signal timing at intersections is not long enough to allow pedestrians to cross the street; guardrail is not present along sections of the drainage channel paralleling Grand Avenue; and traffic signage does not meet the needs of the elderly population. Suggested improvements for traffic signs include providing larger letters and clear and concise directions on signs. Improved street lighting was also suggested.

As stated previously, Grand Avenue has an inconsistent cross-section. A safety concern has been raised at locations where the six-lane section merges back to four-lane section as it causes driver confusion. Lack of turn lane designations and dotted lane striping through intersections also leads to driver confusion. The intersection of Dysart Road and Grand Avenue was maintained as an example.

9. Access Control

The railroad on the north side of Grand Avenue effectively provides a high degree of access control. Frontage roads exist along the southwest side of Grand Avenue through the City of El Mirage. The developments that have occurred in the past decade have generally limited access points to intersecting streets and a few driveways. However, new development along Grand Avenue in the City of Surprise will require additional access points and possible traffic signals along Grand Avenue. Access into new and existing shopping areas needs to be evaluated.

Controlling access along a roadway can increase capacity and improve safety; however, it can hinder economic and development opportunities along the roadway. A balance between the two is needed within the corridor. Extending frontage roads and limiting new development access to frontage roads are improvements that have been suggested. However, maintaining existing access to businesses is important. The Town of Youngtown has requested access to Grand Avenue be maintained at 111th Avenue, 111th Drive, and 113th Avenue. Controlling access along Bell Road has also been suggested.

10. Elderly Mobility

The elderly population in Maricopa County is expected to increase by 80% to approximately 20% of the total population by 2025. A large percentage of the population within the study area is retired or near retirement age. A transportation system is needed within the corridor that maintains independence for the elderly and provides them safe travel options. This system must not ignore the fact that there still is a significant population in the workforce and in schools. The elderly population must be considered in the design elements for motorized and non-motorized travel and for automobile and transit travel.

11. Alternative Mode Travel

Grand Avenue is a multimodal corridor. Many of the citizens of the study area have a need for alternative modes of travel including transit, bicycles and walking. Existing transit service consists of one fixed bus route and paratransit service. Valley Metro Route 106 provides weekday service from Boswell Hospital in Sun City to Youngtown, Peoria, Glendale, Phoenix and Scottsdale. Paratransit (dial-a-ride) operations include the El Mirage Dial-a-Ride, Surprise Dial-a-Ride, and Sun City Area Transit (SCAT), which serve Sun City, Sun City West and Youngtown. Transfers between dial-a-ride systems are available at several locations. All of the above services are available to the general public. In addition, Maricopa County Special Transportation Services provide limited service for seniors, those with disabilities and persons with low incomes. There is also an intercity bus stop in Youngtown, just south of Grand Avenue, serving Greyhound and K-T Lines.

A park-and-ride facility and better and more bus stops along Grand Avenue were identified as corridor needs. Some comments indicated that bicycle and pedestrian traffic should be accommodated within the corridor but should not be allowed on Grand Avenue. Better crossings of Grand Avenue and the railroad for pedestrians and bicycles were identified as a need. Deterring pedestrians from crossing Grand Avenue and the railroad at undesignated crossings is also desired. 107th Avenue was identified as a high pedestrian crossing area. Greenway Road was identified as a good location to cross Grand on a bicycle. Developing recreation corridors along dry riverbeds was also suggested. Golf cart usage along and across Grand Avenue is a concern that needs to be addressed. There is some interest in exploring light rail transit for the corridor.

12. Railroad

In addition to the “barrier” effect of the railroad right-of-way described above, there are other elements to consider. The railroad crosses nine streets at-grade. These crossings create delays to motorists and safety concerns as well as complicating the operation of traffic signals. There is a spur track that crosses Grand Avenue between El Mirage and Greenway roads. This active spur creates some delays to motorists and a safety issue. The major new-automobile off-loading facility near Thunderbird Road creates a lot of truck traffic. Much of this traffic is destined to all points of the state.

The current and future function of the railroad and its impact on traffic circulation needs to be evaluated. BNSF has indicated that train activity along the corridor is expected to increase as the metropolitan area grows. It was suggested that the need for grade separations with the railroad tracks and railroad operational improvements are two issues that should be evaluated. Lowering the railroad at cross streets to match the grade of Grand Avenue was also suggested. Exploring the options for passenger rail was also requested.

4.0 STUDY GOALS AND OBJECTIVES

The main goal of the Grand Avenue Northwest Corridor Study is to develop a consensus on selecting a preferred infrastructure improvement option for the corridor. It is intended that the recommended option be incorporated into the MAG Long Range Transportation Plan

Objectives for the corridor study were developed by the URS Project Team to address each of the categories of issues presented above. Proposed options will be evaluated in Task 9 against each of the objectives to determine which option best addresses the key issues within the corridor. The objectives are listed below, not in any particular order.

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APPENDIX

